

Leading the way through Innovation

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Powerful trends reshape the world

- High-speed communications / Internet
- End of Cold War political constructions
- Removal of trade barriers
- Terrorist attacks; wars in Iraq, Afghanistan
- Emergence of technology-based economies around the world
- Sustained investment in higher education in nations like India and China

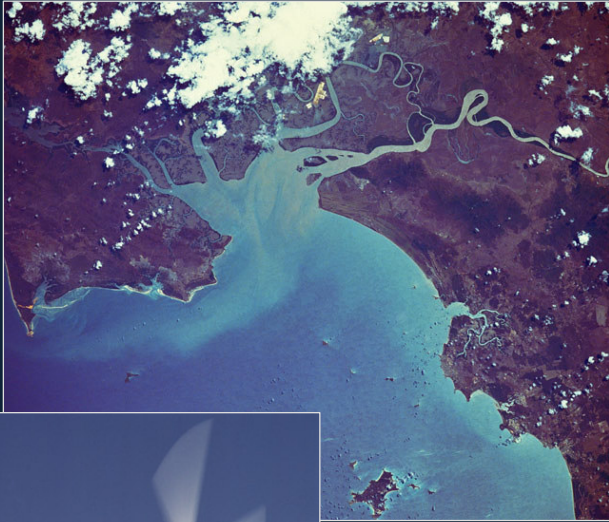
The world of 2020

- 8 billion people; a 25% increase over 2000
- Balance tipped toward urbanization
- Population in developed nations aging; “youth bulge” in underdeveloped nations
- Of a representative 100 people:
 - 56 will live in Asia
 - 16 will live in Africa
 - 4 will live in the United States

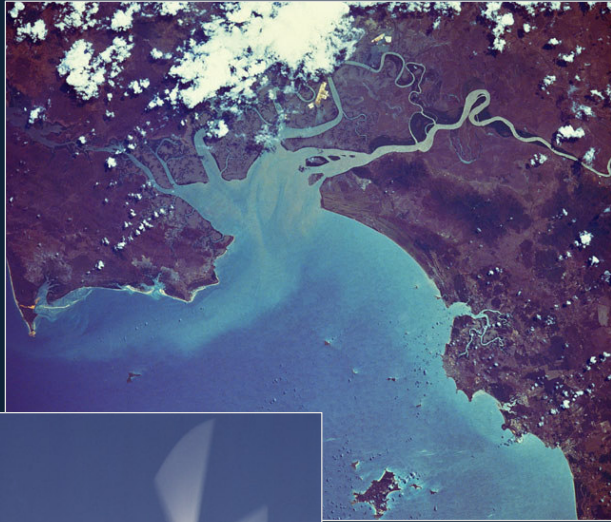


Future issues

- Water shortages
- Global warming
- Energy demands
- New diseases
- Increased competition for technology sector



Future issues



- Water shortages
 - Global warming
 - Energy demands
 - New diseases
 - Increased competition for technology sector
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- Biotechnology revolution
 - Nanotechnology revolution
 - Sustainable technology

“Just as energy is the basis of life itself and ideas the source of innovation, so is innovation the vital spark of all human change, improvement, and progress.”

Theodore Levitt
Edward W. Carter Professor Emeritus
Harvard University

Characteristics of innovation

- Interdisciplinary
- Sparks other inventions, innovations
- Global
- Promotes interaction, openness
- Transformational

Challenges and opportunities

- The bar for innovation is rising
 - Multi-disciplinary and complex
 - Diffusing at an increasingly rapid pace
 - Collaborative between creators and users
 - Global in scope
- Appropriate balances are more critical
 - Between competition and collaboration
 - Between security and openness
 - Between nationalism and globality
 - Between analysis and ambiguity

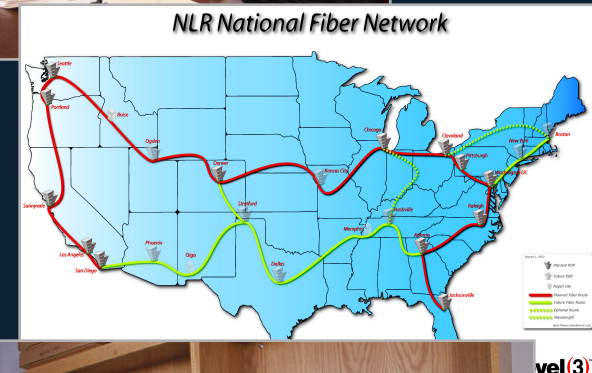
Universities as drivers of innovation



- Educate the talent
- Conduct fundamental research that provides discoveries and knowledge
- Promote technology transfer and commercialization

Universities as drivers of conversation

- Interdisciplinary collaboration
- IT networks
- Policy expertise
- Openness and diversity
- Open-ended discussions about the next Big Things





Generating innovation
at a 120-year old institution



Vision for Georgia Tech

Define the technological
research university of the
twenty-first century

Key Facts About Georgia Tech

- Ranked among top ten public universities
- SAT of entering freshmen among top three public universities
- Research expenditures over \$400 million
- Graduates largest numbers of engineers, women engineers, African American engineers
- One of the nation's largest co-op programs

Four campuses on three continents



Georgia Tech-Atlanta



Georgia Tech-Lorraine



Georgia Tech-Savannah



Georgia Tech-Singapore

Interdisciplinary degrees

- Human-computer interaction
- Bioinformatics
- Quantitative and computational finance
- Prosthetics and orthotics
- Digital media
- Biomedical engineering



Sustainable
technology



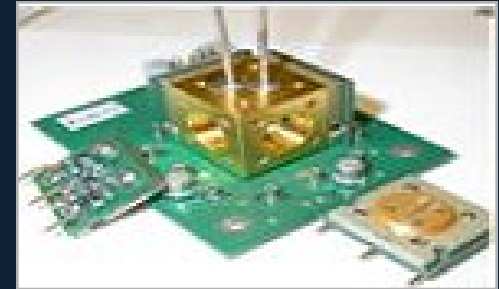
Interdisciplinary research



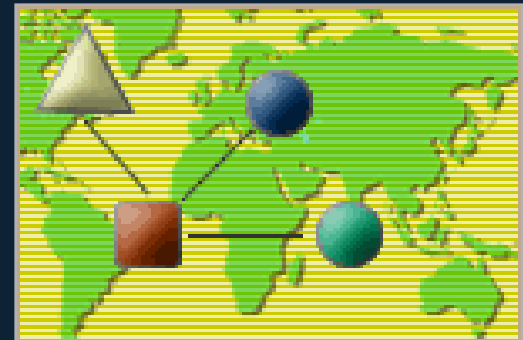
Nanotechnology



Biotechnology/
nanomedicine



Microelectronics/
telecommunications



Logistics



Photonics/optics



Manufacturing

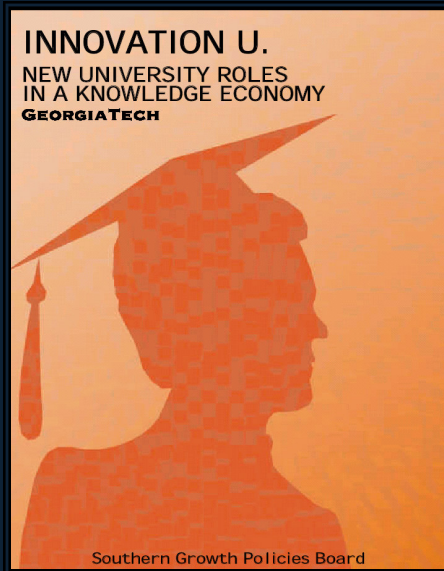
Innovative Collaborations

- Emory/Georgia Tech Biomedical Engineering
- National Nanotechnology Infrastructure Network
- NSF Centers of Excellence:
 - Tissue Engineering
 - Electronic Packaging
 - Photonics
- National Lambda Rail
- Product Lifetime Management Center of Excellence
- The Enterprise Transformation Institute

International programs

- Study Abroad: a third of undergraduates
- Global Learning and Conference Center delivers education around the world
- Global MBA with partner universities in France and Argentina
- Sam Nunn School of International Affairs
- Research and education partnerships:
 - Israel
 - Great Britain
 - France
 - Germany
 - Singapore
 - China

Technology transfer



“Virtually every combination of industry relationship or economic development activity can be found at Georgia Tech, and in a very real sense the school is an operating partner with Georgia state

partner with Georgia state government.... **Perhaps more than any other research university in North America, economic development is an integral, critical component of the mission of the Georgia Institute of Technology, and this has been true from its very inception.”**

Southern Growth Policies Board
Innovation U study

VentureLab

Guiding faculty inventions
and discoveries through
commercialization



Jacket Micro Devices

Advanced Technology Development Center

Award-winning incubator for high-tech start-ups

- 25th anniversary; nation's oldest university-based incubator
- Member and graduate companies had revenues of \$1.75 billion in 2003; employed 4,300

Creating an innovative campus



Biotechnology Complex



Klaus Advanced Computing Building



Technology Square

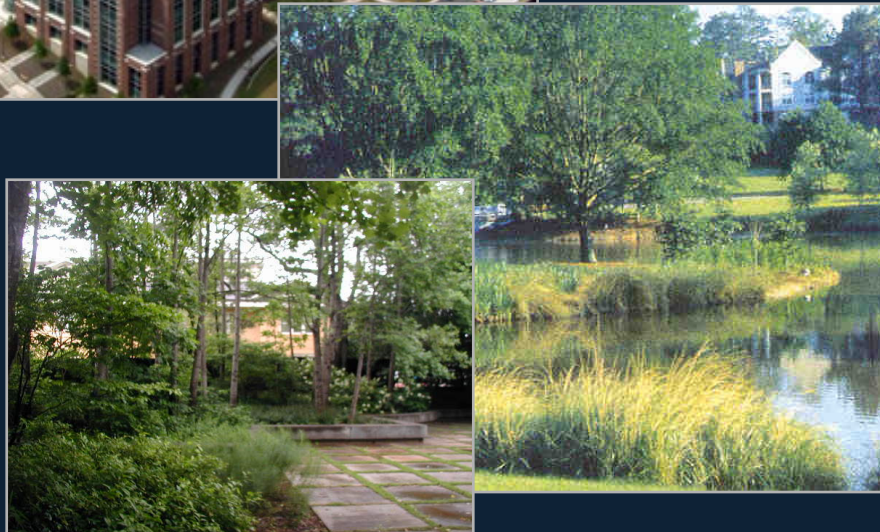
Environmental sustainability




LEED Silver
certification



White roofs reflect city heat.



Rainwater captured in roof
drainage systems, managed
in an Eco-commons for
landscape use.



“The world leaders in innovation and creativity will also be world leaders in everything else.”

Harold R. McAlindon
Author and innovative business consultant